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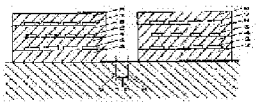
(54) ELECTRONIC COMPONENT AND ITS MANUFACTURE



(57)Abstract:

PROBLEM TO BE SOLVED: To eliminate fluctuations in the overlapped area between upper and lower conductive patterns due to displacements by making the widths of a plurality of overlapping conductive patterns different from one another.

SOLUTION: Laminated on a ceramic insulating substrate 1 are an insulating layer 2 made of a photosensitive benzocyclobutene, a conductive pattern 3 made of a Cu thin film, and an insulating layer 4 made of a similar resin in the order they are mentioned. Further laminated sequentially on the layer 4 are a conductive pattern 5 made of a similar metal thin film having a narrow width obtained by subtracting printing displacements due to an equipment precision from the pattern 3, an insulating layer 6 made of a similar resin, and a conductive pattern made of a similar metal having the same width as the pattern 3. Finally, a laminate is formed by covering the upper layers with an insulating layer 8. As a result, fluctuations in the overlapped area between the upper and lower conductive patterns due to the printing displacements can be eliminated.

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CLAIMS

[Claim(s)]

[Claim 1] Electronic parts characterized by the width of face of the conductor pattern on which it is superimposed in these two or more conductor patterns in electronic parts equipped with two or more conductor patterns by which the laminating was carried out with an insulating layer on a substrate differing, respectively.

[Claim 2] Electronic parts characterized by the width of face of a conductor pattern becoming narrow gradually as the width of face of the conductor pattern of the lowest layer is the widest and moreover becomes the upper layer in the electronic parts of claim 1.

[Claim 3] Electronic parts characterized by the width of face of a conductor pattern becoming large gradually as the width of face of the conductor pattern of the lowest layer is the narrowest and moreover becomes the upper layer in the electronic parts of claim 1.

[Claim 4] They are the electronic parts characterized by said insulating layer consisting of ******** NZOSHI clo butene resin in electronic parts according to claim 1.

[Claim 5] electronic parts equipped with two or more conductor patterns by which the laminating was carried out with the insulating layer on the substrate -- setting -- said two or more conductor patterns -- setting -- a lower layer conductor pattern with the direct width of face of the upper conductor pattern, and a ratio -- BE -- the manufacture approach of the electronic parts characterized by being that it is ******.

[Claim 6] It is the manufacture approach of the electronic parts characterized by said insulating layer consisting of ******** NZOSHI clo butene resin in the manufacture approach of electronic parts according to claim 5.

[Translation done.]

* NOTICES *

1.This document has been translated by computer. So the translation may not reflect the original precisely.

2.**** shows the word which can not be translated.

3.In the drawings, any words are not translated.

DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to the electronic parts which are a surface mounted device or lead components, such as an inductor (L), a capacitor (C), an electric resistance (R) component, a thin film EMI filter, a common mode choke coil, a current sensor, a transformer for signals, and compound electronic parts that constituted these on one components, in detail about electronic parts.

[0002]

[Description of the Prior Art] Conventionally, surface mounted devices, such as an LCR component, a thin film EMI filter, a common mode choke coil, a current sensor, and a transformer for signals, are known. As shown in drawing 5 , on the insulating substrate, especially chip mold electronic parts carry out the laminating of the insulating layers 52, 54, 56, and 58 and conductor patterns 53, 55, and 57 of this width of face by turns by the thin film technology by the photolithography, the spatter, a spin coat, etc. with predetermined spacing, cut an insulating substrate 51 according to the magnitude of each layered product next, and are formed, respectively (refer to JP,6-20839,A).

[0003]

[Problem(s) to be Solved by the Invention] However, in the laminating structure as shown in drawing 5 , in case laminating formation of the conductor pattern of the same width of face is carried out, the printing-position gap by facility precision is generated somewhat. In this case, since the superposition area between vertical conductor patterns was changed and especially a capacitance component was changed by the location gap in the case of superposition, the variation in a property became large.

[0004] then, a pattern with the wide width of face in consideration of a part for the printing-position gap by the facility precision at the time of carrying out laminating formation of the technical technical problem of this invention -- a conductor and a pattern with narrow width of face -- by carrying out laminating superposition combining a conductor, fluctuation of the superposition area between the vertical

conductor patterns by printing-position gap can be lost, and it is in offering the electronic parts which raised the property precision for which a capacitance component is not changed, and its manufacture approach.

[0005]

[Means for Solving the Problem] According to this invention, the electronic parts characterized by the width of face of the conductor pattern on which two or more conductor patterns by which the laminating was carried out are superimposed in said two or more conductor patterns in **** electronic parts with an insulating layer on a substrate differing, respectively are obtained.

[0006] Moreover, the electronic parts characterized by the width of face of a pattern really becoming narrow gradually are obtained as the width of face of the conductor pattern of the lowest layer is the widest and moreover becomes the upper layer as one gestalt of this invention.

[0007] Moreover, the electronic parts characterized by the width of face of a conductor pattern becoming large gradually are obtained as the width of face of the conductor pattern of the lowest layer is the narrowest and moreover becomes the upper layer as other gestalten of this invention.

[0008] the electronic parts which were equipped with two or more conductor patterns by which the laminating was carried out with the insulating layer on the substrate further again according to this invention -- setting -- said two or more conductor patterns -- setting -- a lower layer conductor pattern with the direct width of face of the upper conductor pattern -- a ratio -- BE -- the manufacture approach of the electronic parts characterized by being that it is ****** is acquired.

[0009]

[Embodiment of the Invention] Hereafter, the gestalt of operation of this invention is explained with reference to a drawing.

[0010] Drawing 1 is the sectional view showing the outline configuration of the electronic parts by the gestalt of operation of the 1st of this invention. With reference to drawing 1 , on the ceramic insulating substrate 1 whose thickness is about 0.5mm To the insulating layers 2, such as benz-cyclo-butene, the

conductor pattern 3 which consists of a Cu thin film on it, and a pan To the insulating layer 4 which consists of same resin, the conductor pattern 5 which consists of same metal thin film with the width of face narrower than a conductor pattern 3 which deducted a part for the printing-position gap by facility precision on it, and a pan The laminating of the insulating layer 6 which consists of same resin, and the conductor pattern 7 which consists of a metal with the same, same width of face as a conductor pattern 3 is carried out one by one, finally, it covers by the insulating layer 8 and the layered product of about 30-micrometer thickness is formed.

[0011] In the gestalt of operation of this invention, a conductor pattern makes Ti and Cu spatter film a substrate, and forms Cu thin film by the photolithography and plating. Moreover, the insulating layer is formed of spreading, exposure, etc. using the photosensitive thing. Specifically, the insulating layer and conductor pattern of electronic parts by the following gestalt of operation of this invention are manufactured in the following processes.

[0012] First, the process which forms a conductor pattern is explained. Plasma ashing and a reverse spatter wash the whole surface of an insulating substrate or an insulating resin layer, and a substrate thin film is continuously formed in Ti thin film or a pan for Cu thin film by the spatter. Next, a resist is applied on the obtained substrate thin film, and the crevice of the conductor pattern configuration for which it exposes, develops and asks through a mask is formed on a thin film. Next, electric Cu plating is performed, a resist is exfoliated, a sentiment or dry etching is performed for the front conductor pattern equipped with Cu plating film of a conductor pattern configuration, and the substrate thin film of a conductor pattern is removed. Although the top-face part of a conductor pattern is also removed a little here, eye NANI with electric Cu plating part of a conductor pattern thicker enough than the substrate book film and a conductor pattern are not lost.

[0013] Next, the process which forms an insulating layer is explained.

[0014] After plasma ashing's washing the conductor pattern on the insulating

resin in which the above-mentioned pattern was formed and applying further photosensitive benz-cyclo-butene resin, it exposes through the mask of a desired pattern by the photolithography, and negatives are developed. in this case, a conductor -- a through hole or notching is formed if needed upwards. Next, a cure is performed on suitable conditions, resin is stiffened completely, and it becomes the insulating layer formed on the conductor pattern.

[0015] Since Cu dissolves in the solvent of polyimide and Cu is spread in polyimide when using polyimide as insulating-layer material, it cannot apply directly. Therefore, it is necessary to form covering metal layers, such as Ti, in Cu front face, and a process becomes complicated, moreover, when irregularity is in a substrate, irregularity arises also in the insulating layer of the polyimide formed on it, and formation of a stable layered product becomes difficult.

[0016] In this invention, it can apply directly on Cu by using photosensitive benzocyclo FUTEN resin as insulating-layer material, and the pattern formation moreover according to a photolithography is possible. Furthermore, even if a substrate is concave convex, since flattening of the front face of the formed insulating layer is carried out, it is a simple process and can form the stable layered product.

[0017] The layered product shown in drawing 1 is obtained by repeating the process which forms the above conductor pattern, and the process which forms an insulating layer.

[0018] It cuts in the location which shows the formed layered product with the two-dot chain line of a sign, and the body 11 of electronic parts shown in drawing 2 (a) is acquired. The body of electronic parts is equipped with the polar zone 7a, 7b, and 7c connected with an external electrode at a part for top-face both ends.

[0019] Next, as shown in drawing 2 (b), Electrodes 12a, 12b, and 12c are formed, and electronic parts are obtained so that the both ends of the body of electronic parts may be covered.

[0020] Drawing 3 is the sectional view showing the outline configuration of the electronic parts by the gestalt of operation of the 2nd of this invention. If drawing

4 is referred to, on the ceramic insulating substrate 1 whose thickness is about 0.5mm To the insulating layers 13, such as benz-cyclo-butene, the conductor pattern 14 which consists of a Cu thin film on it, and a pan the insulating layer 15 which consists of same resin, and ** with the width of face narrower than a conductor pattern 14 which deducted a part for the printing-position gap of facility precision on it -- the conductor pattern 16 which consists of a metal thin film [like] -- further The laminating of the insulating layer 17 which consists of same resin, and the conductor pattern 18 which consists of same metal with the width of face narrower than a conductor pattern 16 which deducted a part for the printing-position gap of facility precision is carried out one by one, finally, it covers by the insulating layer 19 and the layered product of about 30 pm thickness is formed.

[0021] In the gestalt of operation of the 2nd of this invention, the conductor pattern and the insulating layer are formed like the gestalt of the 1st operation.

[0022] Drawing 4 is the sectional view showing the outline configuration of the electronic parts by the gestalt of operation of the 3rd of this invention. The electronic parts by the gestalt of the 3rd operation differ from the electronic parts by the gestalt of the 2nd operation by having the configuration which becomes large gradually as the width of face of a conductor pattern moves up.

[0023] With reference to drawing 4 , on the ceramic insulating substrate 1 whose thickness is about 0.5mm To the insulating layers 20, such as benz-cyclo-butene, the conductor pattern 21 which consists of a Cu thin film on it, and a pan To the insulating layer 22 which consists of same resin, the conductor pattern 23 which consists of same metal thin film with the wide width of face which added a part for the printing-position gap of facility precision from the conductor pattern 21 on it, and a pan The laminating of the insulating layer 24 which consists of same resin, and the conductor pattern 25 which consists of same metal with the width of face wider than a conductor pattern 23 which added a part for the printing-position gap of facility precision is carried out one by one, finally, it covers by the insulating layer 26 and the layered product of about 30-micrometer thickness is

formed.

[0024] In the gestalt of operation of the 3rd of this invention, the conductor pattern and the insulating layer are formed like the gestalt of the 1st operation.

[0025] In addition, in the gestalt of operation of this invention, although the electronic parts of 3 terminal structures were shown, 2 terminal structures and 4 terminal structures can also be manufactured to the gestalt of operation of this invention, and Mr. Mukai.

[0026] Furthermore, in the gestalt of operation of this invention, although only electronic parts equipped with the external electrode terminal were described, if lead wire is soldered to an external electrode terminal, it cannot be overemphasized that lead electronic parts can be constituted.

[0027]

[Effect of the Invention] as mentioned above, a pattern with the wide width of face which took into consideration a part for the printing-position gap by the facility precision at the time of carrying out laminating formation according to this invention as explained -- a conductor and a pattern with narrow width of face -- fluctuation of the superposition area between the vertical conductor patterns by printing-position gap can lose, and the electronic parts which raised the property precision for which a capacitance component is not changed, and its manufacture approach can offer by carrying out laminating superposition combining a conductor.

[Translation done.]

2.**** shows the word which can not be translated.

3.In the drawings, any words are not translated.

DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] It is the sectional view showing the outline configuration of the body of electronic parts by the gestalt of operation of the 1st of this invention.

[Drawing 2] (a) is the schematic diagram showing the body of electronic parts of drawing 1 . (b) is the schematic diagram showing the electronic parts of (a).

[Drawing 3] It is the sectional view showing the outline configuration of the body of electronic parts by the gestalt of operation of the 2nd of this invention.

[Drawing 4] It is the sectional view showing the outline configuration of the body of electronic parts by the gestalt of operation of the 3rd of this invention.

[Drawing 5] It is the sectional view showing an example of the electronic parts by the conventional technique.

[Description of Notations]

1 51 Insulating substrate

2 4 6 8 13 15 17 19 Insulating layer

20 22 24 26 Insulating layer

52 54 56 58 Insulating layer

3 5 7 14 16 18 21 Conductor pattern

23 25 53 55 57 Conductor pattern

7a 7b 7c Polar zone

11 Body of Electronic Parts

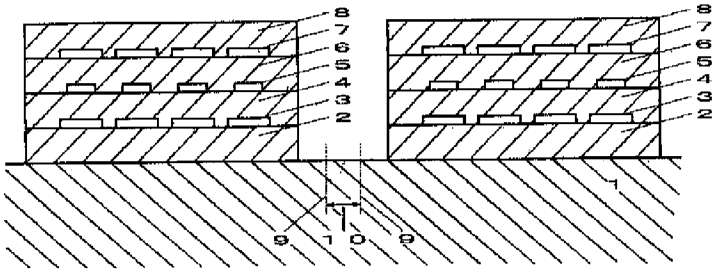
12a 12b 12c Electrode

[Translation done.]

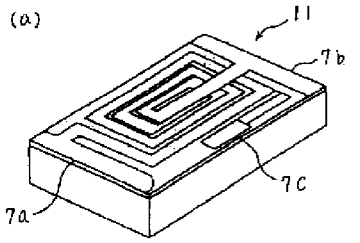
* NOTICES *

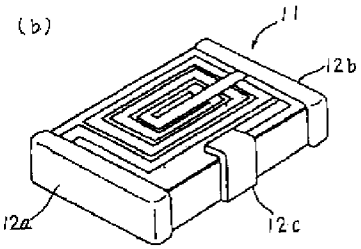
DRAWINGS

[Drawing 1]

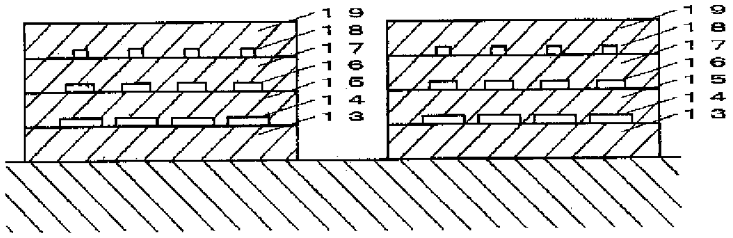


[Drawing 2]

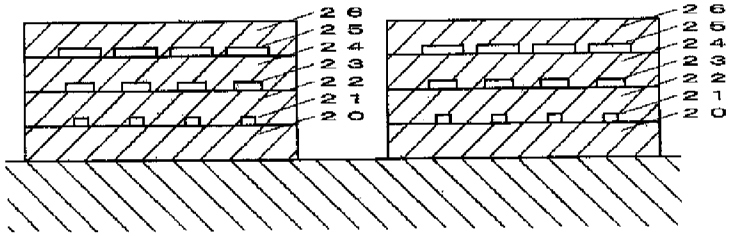




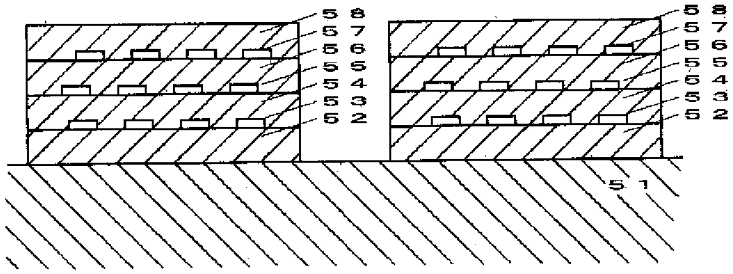
[Drawing 3]



[Drawing 4]



[Drawing 5]



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30/00		27/32	Ｚ
27/32		37/00	Ｄ
37/00		41/04	Ｃ

審査請求　未請求　請求項の数６　ＯＬ　（全　５　頁）　最終頁に続く

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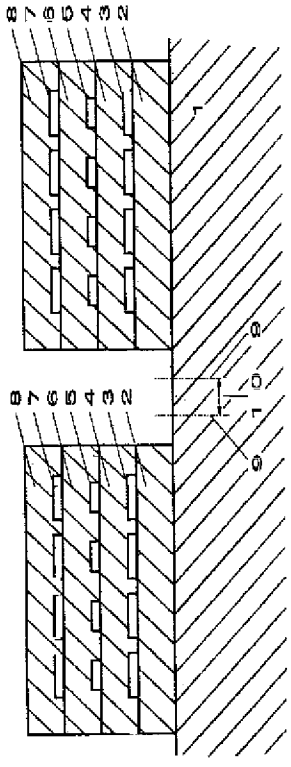
(54)【発明の名称】　電子部品及びその製造方法

(57)【要約】
【課題】　絶縁基板上に絶縁層及び導体パターンを薄膜技術によって交互に積層した構造の電子部品において、積層の際の上下導体パターン間での重畳面積の変動による特性のバラツキを解決する。
【解決手段】　積層の際の設備精度による印刷位置ずれ分を考慮した幅の広いパターン導体と、幅の狭いパターン導体とを組み合わせて積層重畳することにより、印刷位置ずれによる上下導体パターン間での重畳面積の変動をなくす。



【特許請求の範囲】
【請求項１】　基板上に絶縁層と共に積層された複数の導体パターンを備えた電子部品において、該複数の導体パターンにおいて重畳される導体パターンの幅がそれぞれ異なっていることを特徴とする電子部品。
【請求項２】　請求項１の電子部品において、最下層の導体パターンの幅が最も広く、しかも、上層になるに従い導体パターンの幅が徐々に狭くなることを特徴とする電子部品。
【請求項３】　請求項１の電子部品において、最下層の導体パターンの幅が最も狭く、しかも、上層になるに従い導体パターンの幅が徐々に広くなることを特徴とする電子部品。
【請求項４】　請求項１記載の電子部品において、前記絶縁層は感光性ベンゾシクロブテン樹脂からなることを特徴とする電子部品。
【請求項５】　基板上に絶縁層と共に積層された複数の導体パターンを備えた電子部品において、前記複数の導体パターンにおいて上層の導体パターンの幅は直下層の導体パターンと比べて異なっていることを特徴とする電子部品の製造方法。
【請求項６】　請求項５記載の電子部品の製造方法において、前記絶縁層は感光性ベンゾシクロブテン樹脂からなることを特徴とする電子部品の製造方法。
【発明の詳細な説明】
【０００１】
【発明の属する技術分野】本発明は、電子部品に関し、詳しくは、インダクタ（Ｌ）、キヤパシタ（Ｃ）、電気抵抗（Ｒ）素子、薄膜ＥＭＩフィルタ、コモンモードチヨークコイル、カレントセンサ、信号用トランス、及びこれらを一つの部品に構成した複合電子部品等の表面実装部品もしくは、リード部品である電子部品に関する。
【０００２】
【従来の技術】従来、ＬＣＲ素子、薄膜ＥＭＩフィルタ、コモンモードチヨークコイル、カレントセンサ、及び信号用トランス等の表面実装部品が知られている。特に、チップ型電子部品は、図５に示すように、絶縁基板上にそれぞれ、所定間隔をもって同幅の絶縁層５２，５４，５６，５８及び導体パターン５３，５５，５７をフオトリソグラフィ、スパッタ、スピンコート等による薄膜技術によって交互に積層し、次に絶縁基板５１を個々の積層体の大きさに応じて切断して形成されている（特開平６－２０８３９号参照）。
【０００３】
【発明が解決しようとする課題】しかしながら、図５に示すような積層構造体において、同一幅の導体パターンを積層形成する際に、設備精度による印刷位置ずれは、多少なりとも発生する。この場合、重畳の際の位置ずれにより、上下導体パターン間での重畳面積が変動し、特にキャパシタンス成分が変動するため、特性のバラツキが大きくなった。
【０００４】そこで、本発明の技術的課題は、積層形成する際の設備精度による印刷位置ずれ分を考慮した幅の広いパターン導体と、幅の狭いパターン導体とを組み合わせて積層重畳することにより、印刷位置ずれによる上下導体パターン間での重畳面積の変動をなくすことができ、キャパシタンス成分が変動しない特性精度を高めた電子部品とその製造方法とを提供することにある。
【０００５】
【課題を解決するための手段】本発明によれば、基板上に絶縁層と共に積層された複数の導体パターンを備た電子部品において、前記複数の導体パターンにおいて重畳される導体パターンの幅がそれぞれ異なっていることを特徴とする電子部品が得られる。
【０００６】また、本発明の一形態として、最下層の導体パターンの幅が最も広く、しかも、上層になるに従い一体パターンの幅が徐々に狭くなることを特徴とする電子部品が得られる。
【０００７】また、本発明の他の形態としては、最下層の導体パターンの幅が最も狭く、しかも、上層になるに従い導体パターンの幅が徐々に、広くなることを特徴とする電子部品が得られる。
【０００８】さらにまた、本発明によれば、基板上に絶縁層と共に積層された複数の導体パターンを備えた電子部品において、前記複数の導体パターンにおいて上層の導体パターンの幅は直下層の導体パターンに比べて異なっていることを特徴とする電子部品の製造方法が得られる。
【０００９】
【発明の実施の形態】以下、本発明の実施の形態について図面を参照して説明する。
【００１０】図１は本発明の第１の実施の形態による電子部品の概略構成を示す断面図である。図１を参照して、厚さがおよそ０．５ｍｍのセラミックス絶縁基板１上に、ベンゾシクロブテン等の絶縁層２、その上にＣｕ薄膜からなる導体パターン３、さらに、同様な樹脂からなる絶縁層４、その上に導体パターン３より設備精度による印刷位置ずれ分を差し引いた幅の狭い同様な金属薄膜からなる導体パターン５、さらに、同様の樹脂からなる絶縁層６、及び導体パターン３と同じ幅の同様な金属からなる導体パターン７を順次積層し、最後に、絶縁層８で覆い約３０μｍ厚の積層体を形成している。
【００１１】本発明の実施の形態において、導体パターンは、Ｔｉ及びＣｕスパッタ膜を下地とし、Ｃｕ薄膜をフオトリソグラフィとメッキによって形成している。また、絶縁層は、感光性のものを用いて、塗布、露光等によって形成されている。具体的には、次の、本発明の実施の形態による電子部品の絶縁層と導体パターンとは、以下のプロセスで製造されている。
【００１２】まず、導体パターンを形成するプロセスに

ついて説明する。絶縁基板又は絶縁樹脂層の一面をプラズマアッシング、及び逆スパッタにより洗浄し、続いてＴｉ薄膜又はさらにＣｕ薄膜をスパッタ法により下地薄膜を形成する。次に、得られた下地薄膜上にレジストを塗布して、マスクを介して露光して、現像して所望する導体パターン形状の凹部を、薄膜上に形成する。次に、電気Ｃｕメッキを行いレジストを剥離して、導体パターン形状のＣｕメッキ膜を備えた前導体パターンをウェットもしくはドライエッチングを行い、導体パターンの下地薄膜を除去する。ここで導体パターンの上面部分も若干除去されるが、導体パターンの電気Ｃｕメッキ部分は、下地薄膜よりも十分に厚い　め，導体パターンが失われることはない。

【００１３】次に、絶縁層を形成するプロセスについて説明する。

【００１４】上記パターンを形成した絶縁樹脂上の導体パターンをプラズマアッシングにより洗浄し、さらに、感光性のベンゾシクロブテン樹脂を塗布した後、フォトリソグラフィにより所望のパターンのマスクを介して、露光し、現像する。この場合、導体上に必要に応じて貫通穴もしくは切り欠きを形成する。次に、適切な条件にてキュアを行い、樹脂を完全に硬化させて、導体パターン上に形成された絶縁層となる。

【００１５】絶縁層材としてポリイミドを用いる場合、ポリイミドの溶媒にＣｕが溶解し、ポリイミド中にＣｕが拡散してしまうため、直接塗布することができない。よって、Ｃｕ表面にTi等のカバーメタル層を形成する必要があり、工程が複雑になり、しかも、下地に凹凸がある場合は、その上に形成されたポリイミドの絶縁層にも凹凸が生じ、安定な積層体の形成が困難となる。

【００１６】本発明においては、絶縁層材として感光性のベンゾシクロフテン樹脂を使用することで、Ｃｕ上に直接塗布することができ、しかも、フォトリソグラフィによるパターン形成が可能である。さらに、下地が凹凸状であっても、形成された絶縁層の表面は平坦化されるため、簡素な工程で、安定した積層体を形成することができる。

【００１７】以上の導体パターンを形成するプロセスと、絶縁層を形成するプロセスとを繰り返すことによって、図１に示す積層体を得るものである。

【００１８】形成された積層体を符号の二点鎖線で示す位置で切断して、図２（ａ）に示す電子部品本体11を得る。電子部品本体は、上面両端部分に外部電極と接続される電極部７ａ，７ｂ，７ｃを備えている。

【００１９】次に、図２（ｂ）に示すように、電子部品本体の両端を覆うように、電極１２ａ，１２ｂ，１２ｃを形成して、電子部品を得る。

【００２０】図３は、本発明の第２の実施の形態による電子部品の概略構成を示す断面図である。図４を参照すると、厚さがおよそ０．５ｍｍのセラミックス絶縁基板１上に、ベンゾシクロブテン等の絶縁層１３、その上にＣｕ薄膜からなる導体パターン１４、さらに、同様な樹脂からなる絶縁層１５、その上に導体パターン１４より設備精度の印刷位置ずれ分を差し引いた幅の狭い向様な金属薄膜からなる導体パターン１６、さらに、同様の樹脂からなる絶縁層１７、及び導体パターン１６より設備精度の印刷位置ずれ分を差し引いた幅の狭い同様な金属からなる導体パターン１８を順次積層し、最後に、絶縁層１９で覆い約３０ｐｍ厚の積層体を形成している。

【００２１】本発明の第２の実施の形態において、導体パターン及び絶縁層は、第１の実施の形態と同様に形成されている。

【００２２】図４は、本発明の第３の実施の形態による電子部品の概略構成を示す断面図である。第３の実施の形態による電子部品は、第２の実施の形態による電子部品とは、導体パターンの幅が上方に移動するにつれて次第に大きくなる構成を有することで異なる。

【００２３】図４を参照して、厚さがおよそ０．５㎜のセラミックス絶縁基板１上に、ベンゾシクロブテン等の絶縁層２０、その上にＣｕ薄膜からなる導体パターン２１、さらに、同様な樹脂からなる絶縁層２２、その上に導体パターン２１より設備精度の印刷位置ずれ分を加えた幅の広い同様な金属薄膜からなる導体パターン２３、さらに、同様の樹脂からなる絶縁層２４、及び導体パターン２３より設備精度の印刷位置ずれ分を加えた幅の広い同様な金属からなる導体パターン２５を順次積層し、最後に、絶縁層２６で覆い約３０μｍ厚の積層体を形成している。

【００２４】本発明の第３の実施の形態において、導体パターン及び絶縁層は、第１の実施の形態と同様に形成されている。

【００２５】尚、本発明の実施の形態においては、３端子構造の電子部品を示したが、２端子構造、及び４端子構造も本発明の実施の形態と向様に製造することができる。

【００２６】さらに、本発明の実施の形態においては、外部電極端子を備えた電子部品についてのみ述べたが、外部電極端子にリード線を半田付けすればリード電子部品を構成することができることはいうまでもない。

【００２７】

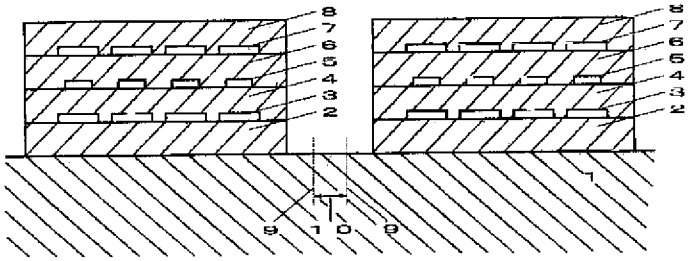
【発明の効果】以上、説明したように、本発明によれば、積層形成する際の設備精度による印刷位置ずれ分を考慮した幅の広いパターン導体と、幅の狭いパターン導体とを組み合わせて積層重畳することにより、印刷位置ずれによる上下導体パターン間での重畳面積の変動をなくすことができ、キャパシタンス成分が変動しない特性精度を高めた電子部品とその製造方法とを提供することができる。

【図面の簡単な説明】

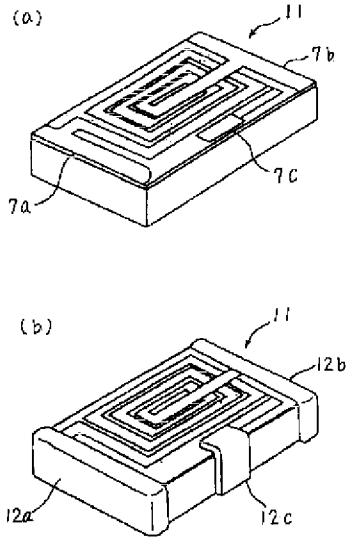
【図１】本発明の第１の実施の形態による電子部品本体

の概略構成を示す断面図である。
【図２】（ａ）は図１の電子部品本体を示す概略図である。（ｂ）は（ａ）の電子部品を示す概略図である。
【図３】本発明の第２の実施の形態による電子部品本体の概略構成を示す断面図である。
【図４】本発明の第３の実施の形態による電子部品本体の概略構成を示す断面図である。
【図５】従来技術による電子部品の一例を示す断面図である。
【符号の説明】
１、　５１　　絶縁基板
２、　４、　６、　８、　１３、　１５、　１７、　１９　　絶縁層
２０、　２２、　２４、　２６　　絶縁層
５２、　５４、　５６、　５８　　絶縁層
３、　５、　７、　１４、　１６、　１８、　２１　　導体パターン
２３、　２５、　５３、　５５、　５７　　導体パターン
７ａ、　７ｂ、　７ｃ　　電極部
１１　　電子部品本体
１２ａ　、　１２ｂ、　１２ｃ　　電極

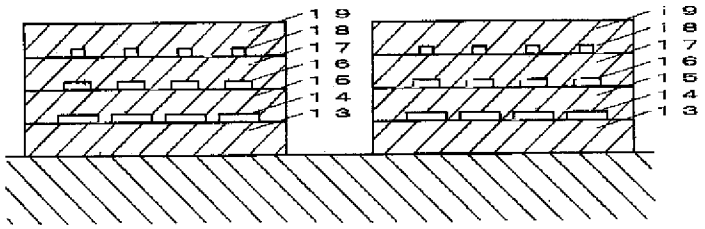
【図１】



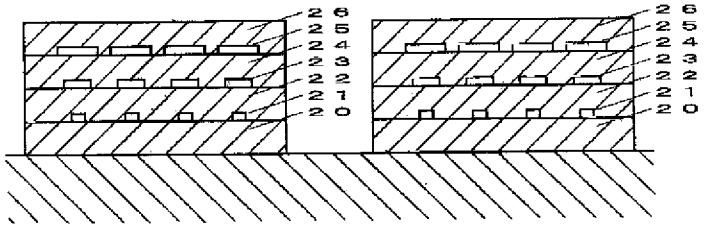
【図２】



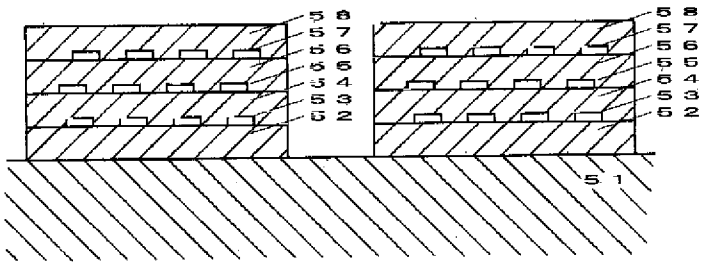
【図３】



【図４】



【図５】



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